

REMARKS

The Office Action of July 5, 2005 has been received and its contents carefully considered.

The present Amendment revises the specification to mention the peripheral recess 11a that is shown in Figure 1 of the application's drawings. Accordingly, the drawing objection in section 2 of the Office Action, along with the objection to the disclosure in section 5(i), should be withdrawn.

The present Amendment also corrects the misspelling of "Mohs" in the abstract and the misspelling of "claims" at the top of page 29. Accordingly, the objection to the disclosure in section 3 of the Office Action should be withdrawn, as should the objection in section 5(ii).

In addition, the present Amendment revises the title as suggested in section 4 of the Office Action.

The present Amendment also revises claim 1 to include the subject matter of claim 3, which is being cancelled. In addition, the Amendment revises the preamble of claim 1 to place it in clearly Jepson-type form and to make it clear that the pulley need not be formed entirely of resin.

Finally, the present Amendment adds a new dependent claim 6 to further protect the invention. It is supported by the paragraph at page 17 of the application, lines 17-19.

Section 9 of the Office Action rejects claim 3 (now-cancelled) for obviousness on the basis of patent 6,716,907 to Asai et al (hereafter simply "Asai") in view of "Handbook of Fillers" (hereafter "Handbook") and patent 6,366,025 to Saeki. This

rejection now applies to claim 1 since (as was noted above) claim 1 has been amended to include what was previously recited in claim 3.

Claim 1 now provides that a resin composition as used in a pulley contains “1 to 5 % by weight of fluororesin powder having an average particle diameter of not more than 10 μm as a lubricant.” This clearly is not suggested by “Handbook,” and the Office Action acknowledges that the Asai reference does not disclose a fluororesin powder. However, the Office Action takes the position that Saeki’s fluorine containing particulate resin (one of many lubricants disclosed in the reference) corresponds to the fluororesin powder of the claims, and concludes that it would have been obvious to use Saeki’s fluoro-containing particulate resin instead of rubber in Asai’s pulley.

Applicants respectfully disagree with this conclusion, as will be discussed below.

The passage at page 16 of the application, line 14, to page 17, line 19, explains that a fluororesin powder has superior lubricating properties. A fine fluororesin powder, with a particle diameter of not more than 10 μm , can be readily dispersed at the surface of a resin pulley and therefore the surface can be provided with good lubricating properties. If the average particle diameter is less than 1 μm , though, the fluororesin powder is usually aggregated and therefore may not be uniformly dispersible.

The superiority of a pulley in accordance with claim 1 has been confirmed experimentally by Takeshi Tsuda, one of the inventors. Mr. Tsuda’s Declaration is attached. In an Experiment 1 described in the Declaration, a wear test was carried out using a Sample 1, a Sample 2, and a Sample 3. In the Sample 1, fluororesin powder with a particle diameter of not more than 10 μm was used in a resin pulley. In Sample 2 (which corresponds to Asai), nitrile rubber was used instead of fluororesin powder. The

resin pulley of Sample 3 employed silicone rubber (one of the lubricants disclosed in Saeki) instead of fluororesin powder. These three samples were tested for wear, and it turns out that Sample 1 (using fluororesin powder having a particle diameter of not more than 10 μm) had substantially better wear resistance than Samples 2 and 3. In particular, if the relative wear thickness of Sample 1 is set at 1, the relative wear thickness of Sample 2 was 2.07 and the relative wear thickness of Sample 3 was 3.29.

With continuing reference to the attached Declaration, an Experiment 2 was conducted to compare the dispersiveness of fluororesin powder in a resin pulley as a function of particle size. A Sample 4 was prepared using fluororesin powder having a particle diameter of 40 μm , and this Sample 4 was compared with the foregoing Sample 1 (with fluororesin powder whose particle diameter was not more than 10 μm). Experiment 2 confirmed that the fluororesin powder in Sample 4 agglomerated and failed to disperse evenly, unlike the fluororesin powder in Sample 1.

The attached Declaration also describes an Experiment 3, in which a wear test was carried out with respect to Samples 1 and 4. The result of this wear test was that, if the relative wear thickness of Sample 1 is set to be 1, the relative wear thickness of Sample 4 was 1.41. That is, the test established that the wear resistance of the resin pulley of Sample 1 was better than the wear resistance of the resin pulley of Sample 4. In addition, Experiment 3 showed that the resin pulley of Sample 4 tended to attack a belt used with the pulley, but the Sample 1 pulley lacked such a belt-attacking property.

In summary, it is respectfully submitted that the attached Declaration establishes that a resin pulley that employs a “fluororesin powder having an average particle diameter of not more than 10 μm as a lubricant” (in the words of claim 1) has properties

that are superior in several respects. The cited references would not have provided an incentive for an ordinarily skilled person to use fluororesin powder having an average particle diameter of not more than 10 μm , and furthermore the ordinarily skilled person would have been surprised at the superior performance of a resin pulley that includes fluororesin powder whose particle size is limited in accordance with claim 1.

Since the remaining claims depend from claim 1 and recite additional limitations to further define the invention, they are patentable along with their independent claims and need not be further discussed. It is nevertheless noted that, when new dependent claim 6 is considered in conjunction with claim 1, a range of diameters for fluororesin powder ~~diameters~~ is set forth. It is respectfully submitted that this range is not suggested by the references.

It is noted that an Information Disclosure Statement is being filed concurrently.

For the foregoing reasons, it is respectfully submitted that this application is now in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,



Allen Wood
Registration No. 28,134
Customer number 23995
Rabin & Berdo, P.C.
Suite 500
1101 14th Street, N.W.
Washington, DC 20005
(202) 326-0222 (telephone)
(202) 408-0924 (facsimile)
(202) 408-5297 (facsimile)

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